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ABSTRACT

This paper analyzed time to degree and enrollment intensity (number of hours earned each quarter) for Ohio State University baccalaureate recipients. Using an investment theory framework based on an organizational behavior model, the study sought to determine whether commitment propensity variables were important in explaining degree commitment, whether investment variables were important, and whether degree progress could be predicted. In this academic model, degree commitment was substituted for the job commitment variable in the original model. Commitment propensity was determined using student characteristics, degree expectations, and student ranking. The investment variables included rewards (defined for this study as grade point average); costs (defined as dropped and failed courses); and investments (defined as numbers of quarters at college and total credit hours earned). The study population consisted of 3,774 baccalaureate recipients between June 1994 and June 1997 who started at Ohio State in a fall quarter as new freshmen and were enrolled in a program that required 196 hours. The data analyzed in this longitudinal study were from the Cooperative Institutional Research Program combined with university enrollment and graduation data. Analysis revealed that the variables of investment, rewards, costs, and commitment propensity were found to be statistically significant in predicting time to degree. (Contains 13 references.) (CH)

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Navigating for Four Years to the Baccalaureate Degree

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Dolores Vura
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Navigating for Four Years to the Baccalaureate Degree

Abstract

Analysis of recent baccalaureate graduates of The Ohio State University indicated a mean elapsed years to the degree of 4.9 years for students who began as freshman at the institution. Further analysis revealed that enrollment intensity, or the number of hours earned each quarter was low and prevented graduation in four academic years. Organizational behavior literature was reviewed and the Farrell & Rusbult (1981) Investment Model, used to successfully predict job commitment, was applied to predict commitment to degree progress, measured as earned hours per elapsed quarter. Commitment propensity was added to the model to test whether student characteristics at the point of entry impacted degree commitment. Data from the Cooperative Institutional Research Program (CIRP) Fall Freshman Survey was combined with institutional enrollment and graduation data to enable a longitudinal analysis of time to degree. Model variables including investments, rewards, costs and commitment propensity were found to be statistically significant in predicting earned hours per elapsed quarter.

Introduction

Fewer students are navigating to their baccalaureate degree in four years. National data (NCES, 1996) show that 31.1% of the nation's 1993 college graduates completed their bachelor's degree four years after graduating from high school. This percentage dropped from 45.4%, the four year graduation rate among the nation's 1977 graduates. A corresponding increase of the percentage of students taking more than six year to graduate, from 24.7% in 1977 up to 30.1% in 1993 also indicates more time is being used to earn the baccalaureate.

At The Ohio State University (OSU) a similar condition, where graduates (who started college after high school) are taking more than four years to earn the baccalaureate degree, is evident. The mean time to earn the baccalaureate degree for the 1996-97 baccalaureate recipients who began at Ohio State as freshmen was 4.9 elapsed years, an increase of 0.7 years from the graduating class of 1992-93. Institutional researchers are most familiar with 6 year graduation rates from the Student Right to Know legislation measuring time to graduation as a percentage of original enrollments (Clarkson and Roscoe, 1994). However, for this study the calculation of time to degree as a percentage of all graduates was used. Consequently, the mean time of 4.9 elapsed years for the most recent graduating class indicates that OSU graduates are currently earning their baccalaureate degree in five years. This calculation provides researchers a current estimate of degree production time and helps students and parents plan for college. A more complete understanding of the specific reasons OSU graduates take five years to complete the baccalaureate degree would be useful and is the goal of this study.

Research Problem Significance

Ohio legislators have not currently mandated a review of degree progress for Ohio's post secondary institutions as has occurred in several states. Instead, the charge to study time to degree originated internally from Board of Trustee members, faculty, and current students who advise University enrollment managers. External pressure concerning longer time to degree also emerged from competing private universities in the central Ohio vicinity that marketed their four-year private education cost as comparable to a five year Ohio State baccalaureate degree. Individual inquiries from state officials and parents of prospective students offered additional support for the importance of studying time to degree and the factors that impact student progress at Ohio State.

Previous Related Research

Knight (1994) in his exploratory analysis of time to degree used sixteen variables covering student background and enrollment experiences variables to predict 58% of the variance in total quarters of enrollment at his institution. This large variance was primarily explained by enrollment behaviors such as cumulative credit hours earned, number of dropped courses, and by academic ability including freshman year grade point average and high school grade point average. Age at matriculation was also significant in predicting time to degree. While this study was an important first step in exploring time to degree, the use of such an extensive list of variables may prohibit institutional researchers from replicating this model. Furthermore, using enrolled quarters as a measure of time to degree makes it difficult to predict elapsed time to degree, which is often more significant in planning.

More recently, Sugarman & Kelley (1997) presented their statewide descriptive

study of degree progress and analysis of enrollment patterns in the Kentucky University System. Their analysis indicated that students were taking excessive hours beyond those required for graduation, which contributed significantly to slower degree progress. They identified seven variables that accounted for 18% of the variance in excess attempted hours. The authors noted that the institutional data sources available for the study were not addressing other possible university service variables or the psycho-social factors that can impact progress.

Volkwein & Lorang (1996) completed a comprehensive analysis of degree progress at a single institution. Their multivariate analysis tested a model based on the predominant constructs of student retention theory including academic and social integration. Surprisingly, this model explained only 27% of the variance in the number of semesters students earned less than 15 credits. The authors concluded, "academic and social integration, goal clarity and levels of satisfaction with the campus have little to do with student decisions to take a lighter academic load".

Exploratory Analysis

A critical element in identifying the major factors that impact degree progress was the exploratory analysis that identified important enrollment patterns related to long elapsed times to degree completion at the institution. To begin to explore the reasons for slower degree progress a graduate cohort database, including the last five years of graduates, was created. This data was used to calculate multiple measures of time to degree. Enrollment continuity (NCES, 1997) was calculated to determine whether students were stopping out for long periods of time, thus extending their time to degree. On average, the 1996-97 graduates were enrolled 78.8% of the elapsed time. This continuity level is close to the traditional level of 80% or three enrollment quarters and a fourth quarter with no enrollment. Enrollment intensity (NCES, 1997) was

calculated to determine whether students were enrolled predominantly on a part-time basis, again as a potential reason to explain an extended time to the degree. OSU graduates attempted an average if 15.0 hours each quarter, much less than the 16.3 required hours to graduate from a 196 required hour baccalaureate program in four academic years. A graduation efficiency value was calculated by dividing the total earned hours at graduation by the required number of hours specific to the degree program. The mean efficiency value for the OSU graduates indicated that 10% of the hours earned by graduates were in addition to the degree requirements. In summary, from this preliminary data analysis, it appeared that OSU graduates were continuously enrolled and earned a reasonable, but not excessive, number of extra credit hours. It appears that five years is needed to complete a 196 hour baccalaureate degree program primarily because graduates attempted too few hours each enrolled quarter.

A comprehensive telephone survey of a sample (n=400) of the 1995-96 graduating class was conducted to explore alumni perceptions of the most important factors that helped or slowed their progress. Further support for low intensity enrollment as a critical factor in longer time to degree for OSU graduates emerged. There were no differences between the two groups in stop outs or in self reported behaviors that would result in excessive hours (such as taking courses for interest or taking remedial courses). However, more four-year graduates worked on campus and were less likely to drop or repeat courses, behaviors that increased enrollment intensity. An additional finding from the open ended student comments was that the greatest percentage of 4 year graduates interviewed (20%) reported that their personal motivation and goal setting was the most important factor that helped their degree progress.

Given this new understanding of student baccalaureate progress, the next critical step in this research was to begin to identify potential theoretical models that supported these results as a

framework for multivariate analysis and potentially predicting time to the degree. Two rich data resources, the graduate enrollment database and Cooperative Institutional Research Program (CIRP) Fall Freshman Survey Trend file, were available to provide a comprehensive foundation for enhancing the exploratory analysis.

Theoretical Framework: Investment Theory

Bean (1982) notes that theoretical studies of college student outcomes provide a planful, conceptual link that enriches research beyond mere description. An appropriate theoretical framework supports time to degree research by culling a potentially extensive list of variables to a parsimonious, thoughtful research set that could strongly impact time to degree. While Kelly & Sugarman (1997) and Knight (1994) presented helpful explorations of potential variables that impact degree progress, this research attempts to apply and test a theoretical framework that meets Bean's recommendations. A theoretical framework was selected for this study that addressed the degree progress issues that emerged from the exploratory analysis and was supported by the existing data sets.

It was evident among four-year baccalaureate recipients at Ohio State University that personal motivation and goal setting played a major role in their progress. From an enrollment perspective, this motivation seemed to be supported by the finding that four-year graduates earned more credits each enrolled quarter. Using the construct of commitment as a potential explanation for greater enrollment intensity it was proposed that four year graduates were more committed to their degree progress and consequently attempted more hours each quarter that they were enrolled. The academic literature of organizational behavior includes the specific construct of commitment in the research of employee turnover. Applying the concept of job commitment to an educational institution implies that just as an employee is committed to

their job a student is committed to earning their degree, and with a greater commitment would come faster progress. This research provides a theoretical basis that served as a viable source for selecting variables among the many factors that could impact time to degree. From the wide range of job commitment studies Farrell & Rusbult (1981) theorized a model of job commitment based on employee investments that, given the exploratory analysis of OSU graduates, offered solid potential for application to predicting degree commitment.

The four constructs that comprise the 'Investment Theory of Job Commitment' include rewards, costs, investments and alternative quality. The authors hypothesized that greater rewards and investments in a job will result in greater commitment, while greater costs and attractive quality alternatives will reduce job commitment. Farrell & Rusbult expressed their model with the following formula:

COMMITMENT = (REWARD – COST) + INVESTMENT – ALTERNATIVE QUALITY

Job commitment defined as "the likelihood that an individual will stick with a job and feel psychologically attached to it, whether it is satisfying or not" was posited to be the sum of rewards minus costs plus investments minus quality of alternatives. Farrell & Rusbult (1981) initially tested their investment theory for job commitment with a cross sectional survey of employees about all measures of the model including commitment. Their results indicated that collectively the variables accounted for 51% of the variation in job commitment. In 1983 they expanded their research of the investment model by conducting a longitudinal research of job commitment among nurses and accountants over a one year time period. The authors again found that the investment model predicted job commitment but they also reported that the constructs in the model change in importance in predicting commitment depending on the point in time when commitment is measured.

The application of this theory to degree progress would imply that students who have greater investment are more committed to their degree progress thus requiring less time to complete the degree. Consequently four-year graduates would be expected to have greater commitment to their degree due to greater rewards, lower costs, higher investments and less attractive quality alternatives associated with their degree. Alternatively, students who take longer to earn the degree are less committed to their progress because of low rewards and investments, high costs, and attractive alternatives.

Commitment Propensity

Missing from the Farrell & Rusbult theory are concepts that address the antecedents of commitment among employees. Clearly student characteristics at the time that they enter college may impact their degree commitment. Recognizing these characteristics at the freshmen level and building a data set that tracks their enrollment patterns provides a longitudinal analysis of degree progress. Student responses to the CIRP Fall Freshman Survey provided data about student goals and intentions. Many of Ohio State University's four year graduates reported that their timely degree progress was due to their advance preparation before college. In order to focus the nearly 200 variables available from the CIRP data and to explore the role of motivation a construct based on commitment antecedents was utilized. The construct of commitment propensity developed by Mowday, Porter, & Steers (1982) and recently studied by Lee, Ashford, Walsh, & Mowday, (1992) was significant in predicting job commitment. Lee et al. tested commitment propensity to identify high and low commitment students in the Air Force academy and found a positive relationship to subsequent student commitment to the Air Force at the end of their four years of enrollment. Commitment propensity is comprised of personal characteristics, expectations and organizational choice that are measured prior to job entry.

Research Questions

Using the investment theory framework and the graduate enrollment database the following research questions guided this study.

1. Are commitment propensity variables important in explaining degree commitment?
2. Are investment variables important in explaining degree commitment?
3. Can degree progress be predicted using the commitment propensity and investment variables?

Variable Measurement

Degree Commitment

Degree commitment was substituted for job commitment in this test of the investment model's application to predict degree progress. The conceptualization of commitment to the degree as commitment to a job was helpful and appropriate. Bean (1983) in his "application of a model of turnover in work organizations to the student attrition process" substituted "several important variables" into a model structure taken directly from the Price/Mueller model of employee attrition. Oliver (1992) in his extensive investigation of the Farrell & Rusbult's Investment Theory framework recommended that commitment be focused on precise actions rather than the more global construct of the organization. Oliver's recommendations were applied in this study of commitment to the baccalaureate degree progress and the measurement of the actions students took to earn the degree rather than the more global construct of commitment to the institution.

At OSU, graduates who progress faster to the baccalaureate degree earned more credits for each enrollment quarter. It is this behavioral commitment to degree progress that was considered comparable to employee job commitment from the organizational behavior literature. For this study, degree commitment was operationally defined as the credit hours earned per

elapsed quarter from admission to graduation. Higher earned hours per elapsed quarter indicated higher degree commitment. Including quarters without enrollment measured commitment more comprehensively by incorporating time that passed that had not been spent earning credit hours. This operational definition is helpful in understanding progress as a function of the total time, both enrollment and non-enrollment, that elapsed between a graduate's first and last quarter.

Commitment Propensity

Commitment propensity served as the commitment antecedent to test for student characteristics as potential predictors of degree commitment. This construct was applied to incoming students and for this study of degree commitment student characteristics, degree expectations, and the student ranking of Ohio State comprised commitment propensity. These measures were self-reported responses from the Cooperative Institutional Research Program (CIRP) Fall Freshmen survey completed at summer orientation, prior to being enrolled.

Personal characteristics included in this study were: highest degree desired at Ohio State, parents' education, social and intellectual self-confidence, ACT composite score, and self-ratings on drive to achieve and academic ability. Expectations were measured using prior credit at a 4 year institution, and student expectations of both earning the bachelors degree and needing extra time to complete the degree. Organizational choice was measured using the ranked choice of Ohio State University.

Investment Model Variables

Rewards . "Pay, opportunity for promotion, autonomy, variety and task identify are examples of job rewards" (Farrell & Rusbult, 1981). For this study of degree progress grade point average was conceptualized as the reward for degree commitment. Bean (1983) in applying an employment model to educational outcomes, noted that for many college outcome

studies earned grades are an appropriate measure of payment for education representing "tangible resources" that support mobility.

Costs. Costs are defined as the absence of rewards. Farrell & Rusbult note "inadequate resources, lengthy travel to work, unfair promotion practices, and undesirable shifts" as examples. For this study of degree progress study costs will be operationalized as dropped and failed courses. These are elements of degree progress that reflect time and energy invested, in selecting the class and perhaps attending, and where the reward, credit hours that are incorporated to determine the grade, are absent.

Investments. Investments refer to the resources that are added to an association, usually, but not necessarily, with the intent to improve the long-term value of the relationship. Length of service, acquisition of non-portable skills, and retirement programs are common job investments that, according to Farrell & Rusbult, increase the costs of leaving the association. In applying these concepts to degree progress, the investments measured for this study were number of elapsed quarters in the degree college and total hours earned. Being admitted to the academic college and declaring a major field of study is considered an investment because of the entrance requirements that are specific to each college and the delays and difficulty in changing colleges.

Alternative Quality. Alternative quality defined in the job commitment studies as "the best available alternative, whether unemployment or an alternative job" was not used in this study for two reasons. First, the prior job commitment studies using the Investment Model did not find clear support for this construct as was evident for the other constructs. Despite the reasoning that high quality job alternatives would be expected to reduce job commitment it is difficult to predict the nature of alternative quality. Furthermore, Oliver (1990) found that alternatives made little significant impact in predicting commitment and concluded that

alternative quality "may simply be an inherently unstable construct, of inconsistent relevance and difficult to operational successfully."

Secondly, the application of alternative quality in this study of degree progress would have been defined as other educational or job market opportunities as an alternative to continued enrollment. Given the decentralized nature of career information for OSU graduates consistent data was not readily available to measure these alternatives.

The final model used in the study is presented in Figure1.

Figure1. Investment Theory Model

Investment Theory Application to Predict Degree Commitment

COMMITMENT PROPENSITY	INVESTMENT	DEGREE COMMITMENT
Personal Characteristics	Rewards	
Highest OSU Degree Planned	Grade Point Average	Earned
Academic ability self-rating		Hours Per
Drive to achieve self-rating	Costs	Elapsed
ACT Composite score	Total dropped hours	
Social confidence self-rating	Total failed hours	
Intellectual confidence self-rating		
Parents' education	Investments	
	Time in degree college	
Expectations	Total earned hours	
Chance of earning a bachelor's degree		
Chance of needing extra time		
Prior credit at a four year institution		
Organizational Choice		
Ranked choice of OSU		

Cohort Description

The population for this study consisted of 7,008 baccalaureate recipients between June 1994 and June 1997 who started at Ohio State University in a fall quarter as new freshmen and were enrolled in a degree program that required 196 hours. Only those students who gave their permission to CIRP to release their social security number were included to facilitate the

longitudinal analysis providing a sample of 3,774. The sample was comparable to the population in demographic characteristics. The sample was 58.5% female and was comprised of 12.6% students of color. The population was 57.5% female and comprised of 13.3% students of color. The mean elapsed quarters to the degree for the sample was 17.5 quarters and the mean elapsed quarters to the degree for the population was almost equal at 17.6 quarters.

Analysis

Ordinary least squares analysis was used to regress degree progress on the model variables to determine the relative strength of each construct in degree commitment. Hierarchical regression was used to enter the commitment propensity score first followed by the investment variables as prescribed by the theoretical model.

Table 1

Descriptive Summary and Intercorrelations of Investment Variables for Degree Progress (n=3,774)

Variables	X_1	X_2	X_3	X_4	X_5	X_6	Y	Mean	St Dev
Commitment Propensity (X_1)	1.0	.27	-.02	-.09	-.01	.04	.25	3.32	.35
GPA (X_2)		1.0	-.29	-.54	.12	.10	.47	2.96	.48
Hours dropped (X_3)			1.0	.34	.01	.08	-.34	9.52	10.77
Hours failed (X_4)				1.0	-.04	.06	-.38	2.70	5.48
College time (X_5)					1.0	.03	-.18	11.30	4.41
Hours earned (X_6)						1.0	.22	212.79	18.12
Hrs earned per elapsed quarter (Y)							1.0	12.32	1.56

Table 2

Regression of Hours Earned Per Elapsed Quarter on Commitment Propensity and Investment Model Variables (n=3,774) (Hierarchical Entry)

Variables	R^2	R^2 Change	b	t	p
Commitment Propensity Score	.063	.063	.65	10.94	<.001
Grade Point Average	.239	.176	.94	17.90	<.001
Hours Dropped	.287	.048	-.03	-15.78	<.001
Hours Failed	.300	.013	-.04	-10.27	<.001
Degree College Time	.347	.047	-.08	-17.40	<.001
Hours Earned	.394	.047	.02	17.20	<.001
Constant			4.60		

Standard Error= 1.21
Adjusted R^2=.393
For model F= 408.41; p<.000

Results

The overall model was statistically significant and explained 39% of the variance in degree commitment which can be predicted from commitment propensity and student investment. Greater support was evident for the investment model variables than for the pre-enrollment student characteristics that comprised the commitment propensity construct. The direction for all but one of the relationships between the model variables and the dependent variable, earned hours per elapsed quarter to the degree, matched all predicted directions.

Commitment propensity explained 6.3% of the variance in degree commitment. The positive relationship supports the prediction that increases in commitment propensity are

associated with increases with degree commitment but the investment variables together accounted for the remaining 33% of the variance.

The reward variable, cumulative grade point average, was entered next and explained the greatest proportion of variance, 17.6%, in degree commitment. The variables representing costs of degree commitment, dropped and failed hours, were entered next. As anticipated both variables were negatively related to degree commitment indicating that increases in the costs of degree reduce degree commitment. Dropped hours contributed more (4.8%) in explaining the overall variance in commitment than did failed hours (1.3%). The investment variables offered mixed results. Total hours earned and time in the degree college had equivalent contributions in explaining degree commitment variance, however, there were differences in the direction of the association. As anticipated an increase in earned hours was associated with an increase in degree commitment. The number of quarters a student was enrolled in their degree college prior to graduation was conceived as an investment and was hypothesized to be positively correlated with degree commitment. The results indicated a negative relationship, the only unexpected finding for the variables of the investment model. Perhaps the negative relationship between more time in the degree college and degree commitment was due to the fact that a high number of quarters enrolled in the degree college would be a function of a high number of elapsed quarters to the degree reducing the hours earned per quarter.

Discussion

The investment model, including commitment propensity, provides a suitable foundation for predicting degree commitment and supports the theory that initial student commitment levels and investments in their degree result in greater degree commitment. Recommended institutional interventions to increase student progress, as a result of these findings, focus on academic

support services, particularly advisement. Counseling students prior to course enrollments to prevent dropped and failed courses due to poor placement should be an important part of supporting student progress. While admitting students with a higher propensity to complete the degree in four years would increase time to degree it appears that advising incoming students about the progress consequences of low course loads would also improve progress. An important consideration in the generalization of these results is that extensive comparisons of the representativeness of students who release their social security numbers when completing the Fall Freshman Survey have not been completed. Additional student characteristics that measure degree commitment prior to enrollment may have larger contributions to predicting subsequent degree commitment.

The results of this study indicated that higher grades were associated with higher credit loads suggesting that students concerned about their progress should be advised to focus on their academic performance. Alternatively, Volkwein and Lorang (1996) found that higher grade performance was associated with extended time to degree because students were taking lighter credit loads to protect their GPA. Studies at additional institutions may provide insight to the reasons for this discrepancy.

Additional variables that were not available for this study but that should be considered for future research include work experience and other educational opportunities as possible alternatives to degree commitment. Such data was unavailable for this study but further research should assess the impact of the job market on degree commitment. College is clearly a large expense for students and their families. Capturing data that measures the financial need and investment may add to the power of the model in predicting degree commitment. Also, variables

Lee, T.W., Ashford, S.J., Walsh, J.P. & Mowday, R.T. (1992). Commitment Propensity, Organizational Commitment and Voluntary Turnover: A Longitudinal Study of Organizational Entry Processes. Journal of Management, 18(1), 15-32.

Mowday, RT., Porter, L.W. & Steers, R.M. (1982). Employee-Organization Linkages: The Psychology of Commitment Absenteeism and Turnover. Academic Press: New York.

National Center for Education Statistics. (1996). The Condition of Education 1996. (NCES Publication 96-304). Washington, DC: U.S. Department of Education.

National Center for Education Statistics. (1997). Findings from the Condition of Education 1997, No. 13 Attainment (NCES Publication 97-984). Washington, DC: U.S. Department of Education.

Oliver, N. (1990). Rewards, investments, alternatives and organizational commitment: Empirical evidence and theoretical development. Journal of Occupational Psychology, 63, 19-31.

Rusbult, C.E. & Farrell, D. (1983). A longitudinal test of the investment model: The impact on job satisfaction, job commitment and turnover of variations in rewards, costs, alternatives and investments. Journal of Applied Psychology, 68 (3) 429-438.

Sugarman, R.P. & Kelly, P.J. (1997, May). An Analysis of Student Time and Credits to Degree. Paper presented at the Annual Forum of the Association for Institutional Research, Orlando, FL.

Volkwein, J.F. and Lorang, W.G. (1996). Characteristics of Extenders: Full-Time Students Who Take Light Credit Loads and Graduate in More Than Four Years. Research in Higher Education, 37(1), 43-68.

other than time in degree college time should be conceptualized and measured as indicators of investment.

As parents, legislators and members of the university community continue to monitor time to the baccalaureate degree student commitment to the degree appears to be an important factor in their progress. University services that recognize this commitment to progress early and support student course selection to minimize drops and failures and that support academic performance will shorten time to the baccalaureate degree.

References

Bean, J.P. (1982). Conceptual Models of Student Attrition: How Theory Can Help the Institutional Researcher. In E. T. Pascarella, (Vol. Ed.), New Directions for Institutional Research: Volume IX. Studying Student Attrition (pp.17-33). San Francisco: Jossey-Bass Inc.

Bean, J.P. (1983). The Application of a Model of Turnover in Work Organizations to the Student Attrition Process. The Review of Higher Education, 6, 129-148.

Clarkson, S. E. & Roscoe, B. (1994). How Long Do Students Take to Graduate? NASPA Journal, 31(4).

Farrell, D. & Rusbult, C.E. (1981). Exchange Variables as Predictors of Job Satisfaction, Job Commitment and Turnover: The Impact of Rewards, Costs, Alternatives and Investments. Organizational Behavior and Human Performance, 27 (28), 78-95.

Knight, W. (1994). Why the Five Year (or Longer) Bachelors Degree? An Exploratory Study of Time to Degree Attainment. Association for Institutional Research Annual Forum Paper. (ERIC Document Reproduction Services No. ED 373 645).